AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES
	1 43

2. AMENDMENT/MODIFICAITON NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. *(If applicble)*
004	07/20/2010	NM-10-01640	

6. ISSUED BY	CODE	7. ADMINISTERED BY *(If other than Item 6)*	CODE
Federal Aviation Administration Acquisition Management Group, ANM-52 1601 Lind Ave SW Renton, WA 98057			

8. NAME AND ADDRESS OF CONTRACTOR *(No., street, county, State and ZIP Code)*	(X)	9A. AMENDMENT OF SOLICIATION NO.
	☒	DTFANM-10-R-00045
		9B. DATED *(SEE ITEM 11)* 06/15/2010
	☐	10A. MODIFICATION OF CONTRACT/ORDER NO.
		10B. DATED *(SEE ITEM 13)*

CODE	FACILITY CODE

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☒ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a)By completing items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment your desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPIRATION DATA *(If required)*

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	
☐	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
☐	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation date, etc.*) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
☐	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
☐	D. OTHER *(Specify type of modification and authority)*

E. IMPORTANT: Contractor ☐ is not, ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (*Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

See page 2 through 22 for answers to questions received.

See page 23 through 43 for referenced attachments.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*		16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*	
15B. CONTRACTOR/OFFEROR *(Signature of person authorized to sign)*	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA *(Signature of Contracting Officer)*	16C. DATE SIGNED

I. The above referenced solicitation is amended as follows:

- Receipt of Offers: The date for receipt of offers remains **July 29, 2010**.

- The following changes are made to the Solicitation, Specifications and Drawings:

  - Drawing M601 – Add note to Chiller Schedule "Chiller provided with demand limiting or VFD per specifications to accomplish generator sequence"

  - A Base Building Signage Schedule and an ATCT Signage Schedule (both in PDF format) have been attached and are considered part of this Amendment No. 004.

  - A representative signage product for design basis has been included as an attachment to this Amendment No. 004. Approved substitutions are permitted.

  - Specification Section 12 24 12 for TRANSPARENT PLASTIC SHADES dated May 5, 2010 shall be replaced in its entirety with Section 12 24 12 labeled "Amendment No. 004". The revised specification section is attached in PDF format.

- The following clarifications/revisions are made to the referenced questions in Amendment No. 003:

  Question 32 references combination fire and smoke dampers. The following specification sections are changed as follows:
  - Section E - Frame type- shall be hat frame, not curtain type. Blades in airstream for all types
  - Section H - Actuation via integral smoke detector and/or input from FACP
  - Section I - Airfoil type blades
  - Section M - master control panel - Delete. Control by FACP
  - Section P - Position indicator switches - to FACP

  Question 43 - Schedule 40 threaded to 1-1/2" and schedule 10 roll-groove for greater than 1-1/2 is appropriate.

  Question 44 - Roll groove vs. cut-groove. No cut-groove allowed. Roll groove only. Change Spec 21 13 13 and 21 13 16 to delete cut-groove.

  Question 45 - Sleeves for pipes larger than 1-1/2", firestop annular space utilizing listed firestop assembly. Sleeves not required for pipes smaller than 1-1/2", firestop in accordance with listed assembly and provide escutcheon.

Question 46 - Hose station spacing in Garage is per agreement with Fire Department. Bid per spec.

Question 47 - There are no hose stations above level 20. Design of standpipe shall be for a pressure of 125 psi residual at each hose connection in the stair while flowing 250 gpm per connection.

Question 48. Hose outlet locations are as agreed to with CCFA. No changes. Bid as specified.

Question 50. The standpipe hose connections will need to be provided with pressure-limiting hose valves per NFPA 14, section 7.8.3.2. Testing of those hose stations as required by code WILL require a drain line for the testing. The drain methodology proposed by the question will allow that testing, and shall be incorporated into the design. For sprinklers, the system pressure regulating valves located in the pump room on the 6th floor of the ATCT are required to maintain pressures below 165 psi on the system side of the system isolation valve per NFPA 13, Section 8.16.1.2. PRV valve arrangement shall be per NFPA 14 figure A.7.2.2(b)

- Answers to questions received from offerors for Amendment No. 004:

1. Question: The specification table of contents lists a section for "motorized transparent plastic window shades." But the specs themselves (12 24 12) do not call for motorization at all. Section 2.2, Item B calls for standard "spring loaded, single piece barrel" rollers used in manual shades. It was our understanding that due to the platform design of this cab, motorized shades are a necessity. The specs do not reflect this.

Answer: Specification Section 12 24 12 for TRANSPARENT PLASTIC SHADES dated May 5, 2010 shall be replaced in its entirety with Section 12 24 12 labeled "Amendment No. 004"

2. Question: Spec 12 24 12 is typically where ATCT cab shade standards are found. But these specs call for plastic window shades "for use in the Guard shack structure" and not the cab (Section 1.1, Item A). We do not find separate standards for the cab shades.

Answer: Cab shades are not in this contract. Only shades in this contract are for the Guard Shack.

3. Question: Refer to Specification 12 24 12. They call for a "slightly lighter" secondary shade material (Section 1.3, Item C). It has been our experience that government specifications are to be precise, not vague. Proper secondary shade material should have a visible light transmission (VLT) of 8%. A difference of even 1% is significant with VLTs. Not requiring a specific VLT allows too much leeway and

opportunity to provide inappropriate material. The listed VLT requirement for primary shade material is accurate and precise at 4% (Section 1.3, Item E), though it is not clear that it should apply only to the primary shade material.

Answer: See response at question 1 & 2 this Amendment No. 004.

4. Question: Refer to Specification 12 24 12. They list Madico, Inc. as an available manufacturer (Section 2.1, Item A). Madico is a supplier of raw shade material only and does not manufacture finished shades. They should not be listed.

Answer: See response at question 1 & 2 this Amendment No. 004.

5. Question: Refer to Specification 12 24 12. They call for "extruded-aluminum tube of diameter (nominal 2-inch)" (Section 2.2, Item B). If manual shades are to be used, the appropriate roller construction is galvanized steel and the diameter is 1 3/4". Aluminum does not typically provide sufficient strength for constant tension manual shades.

Answer: See response at question 1 & 2 this Amendment No. 004.

6. Question: Refer to Specification 12 24 12. They contain a contradiction for shade roll-off direction by stating the "same roll or opposite to best avoid a light gap" (Section 2.2, Item B) and then "reverse" roll in the following spec Item.

Answer: See response at question 1 & 2 this Amendment No. 004.

7. Question: Refer to Specification 12 24 12. They call for a "fascia" (Section 2.2, Item B). Fascias are nonstandard and are not used in ATCT shade applications. They are decorative shade boxes typically used in commercial and residential settings that are completely unnecessary in ATCTs, which house and protect shade rollers within shade recess pockets.

Answer: See response at question 1 & 2 this Amendment No. 004.

8. Question: Refer to Specification 12 24 12. They call for guide wires (Section 2.2, Items I & J). Guide wires are not necessary with manual ATCT shades, as the spring loaded rollers accomplish constant tension. This prevents shade contact with cab glass and simulation of glass angle slope. Guide wires are used to achieve these same things in some motorized ATCT shade installations.

Answer: See response at question 1 & 2 this Amendment No. 004.

9. Question: Refer to Specification 12 24 12. They call for hembars with a "removable tubular locking rod" (Section 2.2, Item I). This bizarre requirement does not reflect current or past national ATCT shade standards.

Answer: See response at question 1 & 2 this Amendment No. 004.

10. Question: Refer to Specification 12 24 12. They state "horizontal seam shall be avoided" (Section 2.2, Item K). While idealistic, this does not reflect the reality at McCarran ATCT. If a shade exceeds 72" in width or is less than 72" in width but exceeds 70" in height, a horizontal seam line is mandatory. This is due to the industry wide maximum shade material width of 72". The drawings for this project show cab window dimensions of 7'-6" wide at top by 9'-10" high. Avoiding horizontal seam lines is impossible in this scenario.

Answer: See response at question 1 & 2 this Amendment No. 004.

11. Question: On drawing S532 the deck edge is shown cantilevered and supporting an exterior stud wall. Please review the floor plans level 17 and up as there are a few locations around the deck edge where the deck is close to 90 degrees of the Beam. There is also duct work indicated in this space. However where HSS 6x3x1/4" is indicated, there is only 5-7/8" available space between the tube steel and WF beams.

Answer: Please clarify what is meant with by" the deck is close to 90 degrees of the beam". Distance from deck edge to column/beam centerline is 15.875". Subtracting the HSS and half of the beam flange leaves 7.375" for a 6" duct opening. (15.875" -6" -2.5" = 7.375")

12. Question: Refer to stair details on sheet S535 and detail E7/ S537. Typical steel connections appear to be with plates or expansion anchors. However, detail E7/S537 shows horizontally embedded anchor bolts. Casting these in place will greatly hinder concrete wall formwork. May expansion anchors or drilled/epoxy anchors be utilized in lieu of embedded anchor bolts?

Answer: For detail E7/S537 expansion anchors may be utilized in lieu of embedded anchor bolts. Use equivalent Hilti KB TZ anchor.

13. Question: Drawing Details G8/A506, E4/A506, A5/A506, show a metal reglet that per Keyed Note #12 is a "cast-in-place metal reglet". This is a confusing detail as it calls for backer rod and sealant at the same location where it is cast-in-place. Should this reglet be installed in a saw cut joint after the concrete is poured so the backer rod and sealant can be installed? Please clarify the design intent.

Answer: Contractors option to saw cut reglet in lieu of forming the joint in the poured in place concrete. Installation of the metal flashing and backer rod and sealant after recessed joint is in place.

14. Question: Architectural Elevations of the Parking garage on Drawing A205 detail E7 (South Elevation) indicates concrete walls 8" thick per note 1 between grids 3-4, 5-10. These walls are not shown or called out on Structural drawing S140. Are walls to be built in these locations? If so please provide details showing the design of these walls with connections to the slab and update the structural drawings.

Answer: See detail C6/S540 (for first level) and please refer to structural detail A5/S54(for second level) see also structural plans and building sections.

NOTE: Change "SEE SECTION A4, THIS SHEET" at the 2nd level, right hand side of section F6/S545, to read "SEE SECTION A5, THIS SHEET"

15. Question: Please provide a detail that shows the connection between the walls shown on S140 at gridlines A, G , 1, and 17 and the columns. Are the walls to tie directly to the columns or should there be an expansion joint between the wall and column. Please clarify.

Answer: Walls tied to columns, See detail C6/S004.

16. Question: Please provide details for the column connections to the footings, slab on grade, elevated decks and steel column to concrete column connection for the Parking Garage.

Answer: See detail A8/S540 (similar), sheets 541 and 542, and C1/S503.

17. Question: The concrete formliner that is specified has a maximum depth of .75". Is this thickness being taken out of the overall structural design thickness for the CIP Walls? Or should the wall thicknesses be increased by .75" in order to accommodate the architectural patterns? Please clarify design intent.

Answer: The .75" shall not reduce the overall required thickness of the concrete wall thickness defined in documents.

18. Question: Please furnish a detail for the transition from a formliner surface to a smooth finish surface.

Answer: All of the horizontal transitions should occur at a control joint and vertical transitions should occur at corners. The concrete wall thickness to be per structural.

19. Question: Will there be utility temporary construction services available when the project starts? Temporary Power needs will be critical as well as fire water services.

Answer: See response to Question No. 19 in Amendment No.003.

20. Question: The Parking Garage shear walls are called out on Sheet A205 note #3 to be Concrete Color #1. Per the specification 033000.1.3.M color #1 is to be the darkest color as identified in 033000.1.3.N "Autumn Brown Sealed". General Note B on Drawing A205 indicates that the parking garage is to be integrally colored. Please clarify what the integral concrete color will be for the rest of the parking garage slabs, decks, walls, columns etc.

Answer: Modify General Note B to read "ALL CAST-IN-PLACE CONCRETE WALLS and COLUMNS SHALL BE INTEGRALLY COLORED, COLOR 2, WITH SMOOTH FINISH UNLESS NOTED OTHERWISE"

21. Question: Refer to drawing S140 between Gridline 8 & 9. Please provide a detail or description of the width and any conditions that bidders should be made aware of for expansion joint in between both slabs.

Answer: See details B3/S540, C8/S545, C5/S541 and B6/S542.

22. Question: The schedule for the bath accessories on the plan page A401does not match up with the part numbers in the specification section 10 28 00. Please clarify if we should use the numbers in the specifications or the numbers on the plans. The numbers in the plans appear more complete.

Answer: Contractor to use numbers for accessories provided on the plan sheet A410.

23. Question: Requirements of specification section 010300, paragraph 3.12 C, seem to be in conflict with section 142100, par 3.5. Our understanding of Owner intent is that if the elevator is to be used during construction that repair or refurbishment is acceptable as outlined in 142100. Is that correct?

Answer: Specification section 01 03 00, para 3.12.C is the accurate use and refurbishment for the elevators on this project. Spec section 14 21 00, par 3.5, is not acceptable for this project.

24. Question: Fireproofing Conflict Between Drawings (G005), Specifications (07 81 00 Item C1, 2, 3, 4 &5) and IBC

The break down of conflict states as follows:

(ITEM #1) SHEET LAS-E-ATCT-G005:

VI. TYPES OF CONSTRUCTION:
A. ATCT BLD.....Type I-A modified to I-B (Fireproofing required)
B. Base BLD.....Type III-B modified to II-B (Fireproofing NOT required)
C. Guard Station.....Type V-B modified to II-B (Fireproofing NOT required)
D. Parking Structure.....Type II-B remains as II-B (Fireproofing NOT required)
VII. REQUIRED FIRE RATED RESISTANCE CONST AS PER IBC TABLE 601:
A. Structural Frame ATCT BLD Required 2 hour provide 2 hour
columns not modified required 3 hour provide 3 hour (Because modified to I-B... 3 hour? yes? or no?)
were supporting roof only 1 hour provided 1 hour
B. Floor Construction
ATCT BLD required 2 hour provided 2 hour
C. Roof Construction
ATCT BLD required 1 hour provided 1 hour

(ITEM #2) SPECIFICATION SECTION 07 81 00 PAGE #10 ITEM C
C. APPLICATION:
1. Structural members: 3 Hours
2. Floor Construction: 2 Hours
3. Roof construction: 1-1/2 Hours
4. Interior load bearing columns and framing (This would include floor & roof beam to columns): 3 Hours
5. Perimeter support angles: 3 Hours

(ITEM #3) TABLE 601 AS REFERENCED:
TABLE 601 TYPE I-B:
*Structural frame: including columns, girders, trusses 2 hour
(Roof supports: Fire-resistance ratings of structural frame and bearing walls are permitted to be reduced by 1
hour where supporting a roof only).
*Floor construction: Including supporting beams and joists 2 hour
*Roof construction: Including supporting beams and joists 1 hour
The drawings are in line with Table 601 of the IBC, except for the conflict of a 3 hour rating on columns with drawings that show 3 hour on columns that support the roof? The specification shows ALL columns and primary floor beams (this would be beam to column) to be at a 3 hour rating.

Please clarify if Item #1(only) or Item #2 (only) or Item #3 (only) apply to this project.

Answer: Contractor to follow Sheet G-005: Item #1 above.

25. Question: Specification 10 14 00- SIGNS, Part 1- General, 1.1 Summary, Item C states that the extent of each type of unit sign work is shown on the drawings. However, there are none indicated on the drawings. Will there be a signage and Graphics Package issued in an addendum?

Answer: See signage schedule attached to this Amendment No. 004

26. Question: Specification section 055100.3.1.G calls for abrasive stair nosings. Stair nosings do not appear in the drawings. Please clarify design intent.

Answer: Delete 05 51 00.3.1.G. No abrasive stair nosings in this project

27. Question: Specification 055100.3.1.H calls for precast concrete treads. Please clarify where precast treads are required.

Answer: Delete 05 51 00.3.1.H No precast treads in this project..

28. Question: Refer to specification 055100 and drawings S535, S536, and S537. Please clarify thickness of concrete fill for stair treads and landings.

Answer: See G8/S537 and C7/S537 indicating 3" concrete fill for landing. Thickness of stair tread fill to be per stair manufacturer detailing direction.

29. Question: Refer to details G7 and E3 on sheet S537. Scaling the drawing appears to indicate stair tread lengths of 1'-6" or 1'-4". Drawing A406 indicates 11" treads. Please clarify stair tread dimensions.

Answer: DO NOT SCALE DRAWINGS. Dimensions should be taken from Arch plans A405-A407.
Structural stair details are not to scale. Tread dimensions per architectural

30. Question: Refer to detail B7 on sheet S122. Please confirm that the 7 square outlines on the west, north, and east sides of the tower core are equipment pads per E7/S529.

Answer: Square outlines are equipment pad locations per E7/S529, verify locations with MEP drawings. There are 8 square outlines on B7/S122.

31. Question: Refer to drawings A306 (for example) and A307. Drawings show different parapet elevations for the CAB. Clarify what is the top of parapet elevation.

Answer: Change Cab Parapet height on A307 to be 352'-4" as per A304-A306

32. Question: The specifications call for a First Responder Radio Amplification system to be completed in accordance with Clark County Fire Prevention guidelines. Clark County Fire Prevention guidelines allows for the installation of either a First Responder Radio Amplification system or Firefighter Telephones. However both are not required. Will only Firefighter Telephones be acceptable in accordance with Clark County Fire Prevention guidelines and spec section 28 30 00 2.16? Please Clarify.

Answer: Bid as specified.

33. Question: Refer to specification 28 30 00. Are there any isolation values or tamper values in the parking structure that will require monitoring by the master fire alarm system?

Answer: The parking garage does not have any valves with tamper switches, since it is not connected to utility water.

34. Question: Refer to specification 05 58 00 1.4/B. The specification references "blast loading, as specified elsewhere in documents." Please verify what documents are being referenced and where they can be found.

Answer: The FAA will not release the blast charges and pressures per security policy. The drawings and specifications encompass these requirements.

35. Question: Refer to specification 10 14 00. Paragraph 1.1.A sub paragraph 3 calls for Metal Etched Sign Plaques at exterior locations. There are no Plaques shown or called for anywhere on the Drawings. Please provide these missing details.

Answer: See signage schedule attached to this Amendment No. 004.

36. Question: Refer to specification 10 14 00. Paragraph 1.1.A sub paragraph 4 calls for Cast Aluminum Seal. There are no Cast Aluminum Seals shown or called for anywhere on the Drawings. Please provide these missing details.

Answer: See signage schedule attached to this Amendment No. 004.

37. Question: Refer to specification 10 14 00. Paragraph 2.2.A calls for us to Furnish and Install all signage of types shown on the drawings. There are no signage details or schedules shown anywhere on the drawings. Please provide this missing information.

Answer: See signage schedule attached to this Amendment No. 004

38. Question: Refer to specification 05 51 00. The Specifications do not call for the Metal Stair Installer to be an AISC Certified Steel Erector. Does this mean the installation of the Structural Steel Framing within the confines of the Concrete Tower Structure can be performed by a Non AISC Certified Steel Erector?

Answer: Installer to be AISC Certified Steel Erector.

39. Question: Refer to Drawing A407. General Notes - Item A states "All Exposed Steel to be powder coated". This note as written is ambiguous. Please be more specific and tell us exactly what exposed steel surfaces you are requesting to be Powder Coated.

Answer: See response to Question No. 8 in Amendment No.003.

40. Question: Refer to specification 05 31 00. Paragraph 2.3.I does not specify specifically what types of Hanger Tabs are to be utilized on this Project. Please clarify if we are to utilize a "Deck Piercing Hanger Tab" or if a "Rolled in Hanger Tab" will be acceptable?

Answer: Rolled in hanger tab.

41. Question: Reference the aluminum grating shown on A105, note 12 and B8/A502 – there is not information given on the supports for this grating other than at the doorway. There is also no information on the structural drawings. Please provide details for this grating.

Answer: Grating landing to be omitted at roof access threshold

42. Question: Ref. C8/A505 – The Tube steel beam at the perimeter below level is drawn as a parallelogram instead of a rectangle. The note refers to structural, which shows an HSS 6x3x1/4 in these locations. Please confirm that the TS will be a rectangular shape per the Structurals, not the parallelogram shape shown on the architecturals.

Answer: Steel tube should be as designed by structural. Location needs to be coordinated so as not to interfere with the exterior finish panels. Tube steel members to be rectangular in shape.

43. Question: Refer to section 085653 Blast Resistant Tempered Glass Window – Please note though the specification description calls out for tempered glass, there is no tempered glass specified. Refer to make ups below (085653-2)

Glass type 1: 3/8" Ann – ½"airspace – 5/8" laminated Ann innerlite

Glass type 2: 5/16" Ann- ½" airspace – 5/8" laminated Ann innerlite

Glass type 3: ¼" Ann – ½" airspace – ¼" laminated Ann innerlite

Please clarify design intent. Also, please confirm:

i. Glass type 1 is to be installed at Window type 1 and similarly for Glass type 2 and 3 respectively.

ii. The outer lites are to be any of the reflective glass as specified in paragraph 2.3.B on sheet 085653-5 and the inner lites are to clear and not low iron

iii. On page 085653-7 paragraph 3.3 describes the location of the windows on Base Building, please confirm the following –

a. Type 1 windows: to be installed on the North entry means to install glass type 1 at door 101 A, 101 B window type C and (2) window type I on sheet A101

b. Type 2 windows: to be installed on North and West faces of building means to install glass type 2 in all the windows on the North and west elevation of base building

c. Type 3 windows: to be installed on South and East faces of building means to install glass type 2 in all the windows on the South and East elevation of base building

Answer: What is shown as tempered glass on sheet A609 and A611 is to be tempered laminated glazing.

i.: There is no window type 1 Window types are shown on sheet A611.
ii.: As specified.
iii.a: Install glass type 1 at door 101A, at window type C and (6) window type I shown on sheet A101, and A201.
iii.b: Correct interpretation.
iii.c: On the South and East faces of building install glass type 3 in all windows on the South and East elevation of base building

44. Question: Advise on glass type/makeup at window type 'S' at ATCT on sheet A203 (information is not available in spec 08 80 00).

Answer: See sheet A611

45. Question: Confirm that All of the S windows have two operable panes per A611.

Answer: Yes per A611

46. Question: Please provide a specification for the frosted glass at the S windows per A611 (e.g. is it acid etched or sandblasted).

Answer: Provide insulated glazing same as spec section 08 80 00 pg 6 2.1.C. Inner most pane to be Acid etched or sandblasted contractor option.

47. Question: Reference C6/A503 – regarding the S windows should the glazing behind the framed in mechanical diffuser be frosted similar to the restrooms or spandrel… also does this need to be tempered if a wall is framed in front of it?

Answer: Change lower panel (below 2'-11") of ALL type 'S' windows to be frosted glass, remove 'T', tempered glass not required.

48. Question: Refer to Specification 12 35 40. Currently Paragraph 1.1.A.1 of the Project Specifications call for Systems Furniture to be provided in both the TRACON Building and ATCT Cab. There are no ATCT Cab Furniture Drawings provided at this time. Please provide us with these missing drawings.

Answer: NO ATCT cab furniture is to be provided

49. Question: Refer to Specification 12 35 40. Page 8 of the Project Specifications provides us with a description of the four (4) WS-4 National Systems Furniture Work Stations that are to be provided in Room 317 of the TRACON Building, but no layout details have been provided. Please provide us with these missing details.

Answer: See response to Question No. 18 in Amendment No.003.

50. Question: Refer to Drawing A601. No layout details or sizes have been provided for the two (2) WS-1 Kimball Table Systems in Room No. 109. Please provide us with this missing information.

Answer: See response to Question No. 18 in Amendment No.003.

51. Question: Refer to Drawing A602. No layout details or sizes have been provided for the six (6) WS-2 National Systems Furniture Work Stations in Room No. 208. Please provide us with this missing information.

Answer: See response to Question No. 18 in Amendment No.003.

52. Question: Refer to Drawing A603. No layout details or sizes have been provided for the six (6) WS-3 National
Systems Furniture Work Stations in Room No. 308. Please provide us with this missing information.

Answer: See response to Question No. 18 in Amendment No.003.

53. Question: Glazing Specification Conflicts (08 56 53, 08 88 58)

1. 085653 Blast resistant tempered glass window –
   Please note though the specification description calls out for tempered glass, there is no tempered glass specified, refer to make ups below (085653-2):

   Glass type 1: 3/8" Ann – ½"airspace – 5/8" laminated Ann innerlite
   Glass type 2: 5/16" Ann- ½" airspace – 5/8" laminated Ann innerlite
   Glass type 3: ¼" Ann – ½" airspace – ¼" laminated Ann innerlite
   Confirm the following –
   i. Glass type 1 is to be installed at Window type 1 and similarly for Glass type 2 and 3 respectively.
   ii. The outer lites are to be any of the reflective glass as specified in paragraph 2.3.B on sheet 085653-5 and the inner lites are to be clear and not low iron
   iii. On page 085653-7 paragraph 3.3 describes the location of the windows on the Base Building, please confirm the following –
   a. Type 1 windows: to be installed on the North entry means to install glass type 1 at door 101 A, 101 B window type C and (2) window type I on sheet A101
   b. Type 2 windows: to be installed on North and West faces of building means to install glass type 2 in all the windows on the North and west elevation of base building
   c. Type 3 windows: to be installed on South and East faces of building means to install glass type 2 in all the windows on the South and East elevation of base building
2. 088858 ATCT CAB Glazing –

Please confirm that the glass at the cab is 1 3/8" thick triple laminated glass per paragraph 2.2.C on page 088858-5

3. Advise on glass type/make up at Guard station on sheet A117.
4. Advise on glass type/makeup at window type 'S' at ATCT on sheet A203.

Answer: Question 1: See response to Question 43, this amendment for answer.
Question 2: Provide as specified.
Question 3: See spec section 08 80 00 pg 6, para 2.1.B.
Question 4: See response to Question 46, this amendment for answer

54. Question: Refer to Specification 28 30 00 2.13/B. The code analysis states that the ATCT is a High Rise with Group B occupancy, however the Base Building is only a four story building with a Group B occupancy. Per IBC 2006 the ATCT requires an Emergency Voice/Alarm Communication System. The base building is separated from the ATCT by a 3 Hour Fire Wall, therefore per IBC 2006 the base building does not require an Emergency Voice/Alarm Communication System for audible notification. The specifications referenced above only list Fire Alarm Horns no Fire Alarm Speakers, however the drawing LAS-E-ATCTF-902 only shows symbols for Speakers/Strobes. Will Horns and Horns/Strobes be acceptable in the Base Building?

Answer: Provide Speakers and Speaker/Strobes per the drawings.

55. Question: Refer to Drawings C5/M110 & B3/M301. C5/M110 Plan View does not match the B3/M301 Detail. Specifically the routing of the return air on floor 17. Please advise how to proceed.

Answer: See answer for #85 below

56. Question: Page 17 of the Solicitation, Offer and Award document under the "Integrated Master Schedule (February 2009)" section states that the offerors must submit an Integrated Master Schedule. However, the section below, "Contractor Integrated Baseline Review(February 2009)", states the Integrated Baseline Review does not occur until 60 calendar days after award. Also, page 42 under "L001.SUBMISSION OF OFFER" does not list an Integrated Master Schedule as an inclusive item.

Please confirm whether an "Integrated Master Schedule" is required with the offer.

Answer: An "Integrated Master Schedule" is not required with the offer. This is a post award task.

57. Question: Paragraph 1.13-2 requires an ANSI/EIA-748-A compliant EVMS. Given the significant costs that will be added to the project associated with development and/or implementation of a compliant EVMS, would the FAA permit contractors to utilize a system that, although not deemed ANSI/EIA-748-A compliant by the Cognizant Federal Authority, follows the general principles of ANSI-748?

If following the general principles of ANSI-748 to track earned value is not allowed, paragraph 1.13-2 also requires offeror to implement the system within 90 days after award. We are of the understanding that approval and implementation of an ANSI/EIA-748-A compliant EVMS will require more than 90 days. Please advise if this means that the plan to achieve compliance must be implemented within 90 days of award, or an EVMS must be deemed ANSI 748-A compliant by the CFA and implemented within 90 days after award.

Answer: If the contractor can demonstrate how their system correlates to the ANSI code, It is acceptable to comply with the general principles of ANSI -748 without being fully compliant in accordance with the Cognizant Federal Authority.

58. Question: In the General Structural Notes LAS-E-ATCT-S001 under Drilled Piers note 7. It says "The contractor shall make and maintain accurate records of the drilled pier depths, bearing, stratum, diameter, and location including off center eccentricities."

This is usually done by the Owners Quality Assurance Agency coordinated with the Geotechnical Engineer. Is this requirement for the contractor to keep separate records from the QAA or is the contractor performing the QA Function?

Answer: Contractor responsible for the requirement and for keeping the logs. Owner hired inspector will coordinate with Geotechnical Engineer and will use any records kept by the contractor.

59. Question: Drawing E119 notes 19 and 20 tell you to see detail G2 on drawing E502 for hand hole detail. Detail G2 note 1 states that "hand hole size dimensions are specific for each application and are indicated on the drawings." There are no hand hole dimensions shown on the drawings. Please provide.

Answer: Delete Power Hand Hole, Keyed Note 20, and run power directly from the Base Building Electrical Room to transformer disconnect switches D-EPHA-GS and D-EPHB-GS per Power One-Line Diagrams on Sheets E611 and E612. For Communications Hand Hole, provide a 24"x24"x24" hand hole.

60. Question: Electrical symbols legend stats that fixtures that are shaded are to have emergency ballast. Per the fixture rep. the LED fixtures do not have an option to add emergency ballast. Please clarify design intent.

Answer: The symbol legend description is incorrect. It should read "Shaded symbol indicates fixture connected to an emergency circuit." There is not a requirement for emergency ballasts on the project.

61. Question: Will there be NV Energy or CenturyLink drawings issued for this project?

Answer: Yes, they will be issued when they are available.

62. Question: Refer to Section L, incorporated clause 3.2.2.3-38. Given that this solicitation is being conducted on a fixed price proposal basis in open competition, please clarify whether or not a Certificate of Current Cost or Pricing Data is to be submitted with the bid.

Answer: A Certificate of Current Cost or Pricing Data (CCCPD) is not to be submitted with the offer. A CCCPD may be required for changes (modifications) to the contract as determined by the CO.

63. Question: The material finish legend on drawing A607 indicates "SC" sealed concrete is to be determined by the contractor. Please clarify what type of sealer is required for application on the floors and walls as called on in the finish legend.

Answer: Provide the following or equal: Benjamin Moore, Super Spec HP, Fast Dry Epoxy Floor Sealer/ Finish P41.

64. Question: Some of the specifications include warranties for longer than 12 months (section 055800, metal coil screen and frame, paragraph 1.9.B states "Warrant metal coil screen and frame system by the manufacturer, installer and General contractor agreeing to repair or replace coil screen and attachment components that fail in materials, workmanship, or installation for a period of 5 years from date of substantial completion"). The wording of the warranty paragraph states " warranty by manufacturer, installer and Contractor...". As a contractor we have no problem assigning or passing on manufacturers and installer warranties, but do have an issue with signing long term warranties. Please note, bonding companies are also unwilling to write bonds for contractors on products for more than 12 months, and should they allow an exception charge a monthly surcharge on the bond cost for every month over 12 months or will simply not write a bond for a general contractor. Will the owner consider changing the language to allow all warranties over 12 months as a pass through warranty only (not signed by the general contractor)?

Answer: The FAA will enter into a contract with the Prime Contractor only; therefore, all warranties are considered to be between the FAA and the Prime Contractor.

65. Question: Contract clause 3.2.2.3-13 (C) references "Item Samples" if required. The section goes on to state that "this SIR includes provision 3.2.2.3-4, Samples." What samples, if any, would the FAA like submitted with our proposal?

Answer: No samples are required with your proposal.

66. Question: Please confirm that the FAA will provide Builder's Risk insurance for the project. If yes, please define coverage limits and deductibles.

Answer: The FAA does not provide Builder's Risk insurance. Please refer to clause 3.2.2.3-47 titled, "Permits and Responsibilities." The clause states,"You are also responsible for all materials delivered and work performed until you complete and we

accept the entire work, except for any completed unit of work that may have already been accepted under the contract."

67. Question: Does the FAA have specific performance and payment bond forms they would like the selected GC to use? If so, please provide.

Answer: Offerors can obtain SF-25 and SF-25A from the GSA forms library.

68. Question: Will the Owner agree to indemnify the Contractor for pre-existing hazardous materials? Will the Owner agree to be the Generator of all pre-existing hazardous materials encountered onsite? Will the Owner agree to sign all manifests for pre-existing hazardous materials encountered onsite?

Answer: The Government agrees to remediate, at its sole cost, all hazardous substance contamination on the leased premises that is found to have occurred as a direct result of the installation, operation, and/or maintenance of the ATCT facilities. Thus, the FAA would be the "generator" and sign the manifest for such hazardous substance contamination. However, the Clark County Department of Aviation would be responsible for remediation of other pre-existing hazardous substance contamination, in accordance with lease no. DTFAWP-10-L-00013*, between the Clark County Department of Aviation and the United States of America, dated May 4, 2010.*

69. Question: Please reference details E8/A505, B5/S120, A8,F5,F7,A7/S532. Notes 21 and 22 on A505 state "stainless steel HSS support see structural for size, connections". The details on sheet S532 do not provide sizes for the pair of HSS supports at each jamb. Also, the structural drawings do not specify these members as stainless steel. Please confirm sizes and material types for these supports.

Answer: The sizes of the pair of HSS supports at each jamb are provided on B5/S120 (HSS4x2x1/4). Notes 21, 22, 23 and 24 can be changed to steel

70. Question: Spec. section 071416 calls for fluid-applied waterproofing at ATCT catwalk roof and microwave area floor. These areas do not show fluid applied waterproofing on the drawings. The catwalk area shows TPO roofing and the microwave area is not specified. Please clarify.

Answer: The catwalk area remains TPO. The microwave area is fluid applied waterproofing.

71. Question: Spec. section 078100 refers to the warranty provided by "Contractor" is this refering to the manufacture, subcontractor, or general contractor? Refer to warranty question 64.

Answer: Refer to the answer to question No. 64 in this Amendment No. 004.

72. Question: Spec. section 074213 calls for an R-20 panel but a 2" insulated panel is specified. To achieve the R-20 we would need to go to a 3" panel. Please clarify.

Answer: Provide 2" insulated panel

73. Question: Is the 35 lb/sf designed wind load adequate for this panel system at 350' in the air?

Answer:Wind load: 65psf above cab roof, 55psf otherwise

74. Question: Will the field quality control testing for the metal wall panels in section 074213 be done by the owner or general contractor?

Answer: General Contractor

75. Question: Please clarify the structural steel fireproofing requirement for the TRACON Building. Do all members get spray applied fireproofing or Intumescent paint per detail G006/A5?

Answer: Two systems are used spray applied fireproofing and intumescent paint. See Floor Plans, and enlarged details on sheet A501 for which columns receive which system.

76. Question: The specification for the Guard House glazing states that the Guard House is to receive 1" insulating glass units. The details on sheet A508 however seem to indicate laminated glass. Please confirm which type of glazing is to be used at the Guard House.

Answer: See spec section 08 80 00 pg 6 ; para 2.1.B.

77. Question: Per the door schedule, frame F7 is specified as a 2-hr frame however the door that goes into that frame is only rated for 90 mins. Is this correct? Or should the door be rated for 2-hr?

Answer: This is correct. Due to the Opening size the frame is treated as a wall and requires the 2 hour rating. The door only required 90min.

78. Question: Per the door schedule, several doors are rated for 180 mins with a 3-hour rated solid panel side light. There is no specification for the solid panel side light. Please provide.

Answer: Solid panel side lite to be an extension of the 3 hr frame

79. Question: Specification 101400-4 paragraph 1.6 A states "provide a five year warranty against defective materials and workmanship for all sign types required." Is it

safe to assume that the 5 year warranty is either a 5 year material warranty or a 5 year material and installer warranty (not a general contractor warranty)?

Answer: Refer to the answer to question No. 64 in this Amendment No. 004.

80. Question: Refer to Specification 10 14 00. Paragraph 1.3D specifies sign type 1 through 9. the Drawings only indicate sign type 10. Please clarify if sign type 1 through 9 are used for this project and if yes - the location or quanity for each.

Answer: See signage schedule attached to this Amendment No. 004

81. Question: Under section # 12 35 40 – Systems Furniture the bid is calling out only Kimball and Steelcase as products allowed to be bid. Will Allsteel brand furniture be accepted as an approved equal?

Answer: Material approval is a post-award issue. If the substitute product meets the contract drawings and specifications, it can be submitted as an "approved equal" product.

82. Question: Refer to Specification 12 35 40. The drawings indicate National for the supplier of the furniture. The specifications specify Kimball. Please clarify who is permitted to bid the furniture.

Answer: Following manufacturers are accepted. Kimball, Steelcase, and National.

83. Question: Refer to Specification 13 49 25-3. Where is the Exterior Finish Schedule as referenced in the Specifications, section 13 49 25, item 2.2.C.4?

Answer: No exterior finish schedule. Delete Specification, section 13 49 25, item 2.2.C.4

84. Question: Refer to Specification 13 49 25. It appears that there's an error in the specification for the microwave transparent EM windows. Paragraph 2.2.C calls out an outer window fabric (M42) - which contradicts the EM window details shown on the drawings. The inner and outer windows are used for a different type of EM window system provided on some previous towers (Orlando, Atlanta and Phoenix). Those towers had an inner and outer window, inflated in between. The windows depicted for McCarran ATCT are the pre-tensioned system, using a single layer only (M26). Which microwave transparent EM window type is intended for the McCarran ATCT?
Answer: See response to Question No. 28 in Amendment No.003.

85. Question: Sheet M110 , C5 Plan View does not show the return ducts which penetrate the 18th floor level as referenced on the B3/M301 detail (RF-10). Please provide locations and quantity of the return air duct and registers associated wih RF-10 on the plan view.

Answer: Plan C5 on M110 is correct. Section B3 return air to RF10 will be modified to match Plan C5 and submitted after bid. Please bid with return air information shown on M11, C3/M111 and C7/M111

86. Question: Specification 230700-3.18 indoor duct insulation schedule has all indoor duct being insulated. Specification 233113-G has liner at supply air ducts, return air ducts, supply fan plenums and transfer ducts. We assume that lined ducts do not need exterior insulation wrap. Pleae verify.

Answer: Please refer to 3.17.B.1

87. Question: Refer to Drawing M.001 and A301. General Note T on M.001 indicates security bars on all exterior duct/openings equal to or larger than 96in2 . Please that security bars are requiried at removable louvers (ie Note 5 of A301). If security bars are required, are louvers to be removable?

Answer: Louvers are still to be removable. Please use non-proprietary screws/bolts on the louvers.

88. Question: Refer to Specification 23 05 16-1.3-B and Drawing M106.. Contractor has identified two anchors on sheet M106 which may be subject to specification section 230516-1.3-B. Specification section 230516-3.1-B indicates that other expansion compensating systems may be required which are not shown. Does the 230516-1.3-B delegated design extend to anchors which are not shown? Please identify the specific areas the engineer requires this delegated design.

Answer: Install as shown, as specified and as required by calculations to meet specification.

89. Question: Refer to Specification 23 05 16-3.2. We assume the fittings described in Specification Section 230516-3.2 include those required to route the systems through the building. Please verify.

Answer: Yes.

90. Question: Refer to Specification 23 05 16-3.3-D. Will the contractor be required to procure the services of a professional engineer to review stress of the entire HVAC piping system, or is Specification Section 230516-3.3-D limited to the anchors that are shown, and anchors otherwise required in conjunction with 230516-3.1-B. Can an analysis be limited to certain pipe sizes?

Answer: Required for all as indicated in question 88 above.

91. Question: Refer to Specification 23 15 71. Part 1.5 C asks for a list of all proposed subcontractors to be submitted with his bid. Where is this to be located on the bid form?

Answer: Not required for bid. Please provide with Submittal.

92. Question: Refer to Specification 23 15 71. Part 1.5 E asks for a detailed equipment list including manufacurers data sheets. We assume this is to be submitted by the contractor after award. Please verify. If this is to be submitted with the bid, where is this to be located on the bid form?

Answer: Not required for bid. Please provide with Submittal.

93. Question: Drawings A601-A604 indicate locations of systems furniture in the Base Building. The specification 123540 gives some information for the requirements of the furniture but no details have been provided in order to price the systems furniture. Please provide details, sections or descriptions of what is required in each of the rooms 109, 207, 208, 308, 317 in order to provide pricing for these items.

Answer: See response to Question No.18 in Amendment No.003.

94. Question: The systems furniture specification 123540 indicates "Kimball-Certa" was used as the basis of design and "Steelcase" is also approved for bidding purposes. Please clarify if "National" as listed in the tables on drawings A601-A604 is acceptable for use as a systems furniture manufacturer as "Kimball" and "Steelcase" is not listed for use on any of the A601-A604 sheets.

Answer: See response to question no. 82 this Amendment No. 004.

95. Question: Please clarify whether the FAA will seek damages for delay, and if so, what type and amount of damages?

Answer: This question and others like them revolve around the absence of liquidated damages (LD's) from the solicitation. In response to those questions is the following:

> *The FAA does not find that LD's are suitable for this project, as the environment for this project does not satisfy the two part test for inclusion of LD's. From AMS (and FAR), we must only use the liquidated damages clause when, "The time of delivery or timely performance is so important that the Government may reasonably expect to suffer damage if the delivery or performance is delinquent". Currently and the for the foreseeable future we have an operable ATCT & TRACON serving McCarran International Airport, therefore we do not expect to suffer damage that would necessitate the inclusion of LD's. Also, following final acceptance of the facility, the FAA will begin systems installation for air traffic control equipment that is separate from this contract. In other words, a delay would not impact our operations nor would it cause us to suffer damages other than actual damages.*
>
> *The FAA does expect to be compensated for actual damages. Each day that the contractor is responsible for exceeding the performance period, we must maintain*

a staff for quality assurance on-site. Those are the only damages that are intended to be sought, if necessary.

96. Question: Will the FAA include a cap on damages for delay, tied to a percentage of the total contract price?

Answer: No. Actual damages should be sought and those must be determined if and when they are necessary.

<<<END OF AMENDMENT>>>

Accord 15

A Modular Sign System

Corporate

Interior System Standards

APCO

Personnel Signs

30mm x 150mm
1 1/8" x 6" (approx.)
AC100

45mm x 210mm
1 3/4" x 8 1/4" (approx.)
AC101

45mm x 210mm
1 3/4" x 8 1/4" (approx.)
AC102

60mm x 210mm
2 3/8" x 8 1/4" (approx.)
AC103

60mm x 255mm
2 3/8" x 10" (approx.)
AC104

30mm x 150mm
1 1/8" x 6" (approx.)
AC105

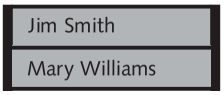
45mm x 210mm
1 3/4" x 8 1/4" (approx.)
AC106

45mm x 210mm
1 3/4" x 8 1/4" (approx.)
AC107

60mm x 210mm
2 3/8" x 8 1/4" (approx.)
AC108

60mm x 255mm
2 3/8" x 10" (approx.)
AC109

60mm x 150mm
2 3/8" x 6" (approx.)
AC110

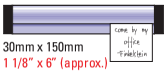


90mm x 210mm
3 1/2" x 8 1/4" (approx.)
AC111

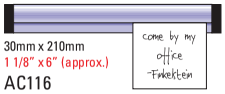
45mm x 210mm
1 3/4" x 8 1/4" (approx.)
AC112

60mm x 210mm
2 3/8" x 8 1/4" (approx.)
AC113

60mm x 255mm
2 3/8" x 10" (approx.)
AC114



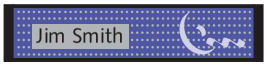
30mm x 150mm
1 1/8" x 6" (approx.)
AC115



30mm x 210mm
1 1/8" x 6" (approx.)
AC116

45mm x 210mm
1 3/4" x 8 1/4" (approx.)
AC117

60mm x 210mm
2 3/8" x 8 1/4" (approx.)
AC118



60mm x 255mm
2 3/8" x 10" (approx.)
AC119

Conference Room Signs

120mm x 210mm
4 3/4" x 8 1/4" (approx.)
AC125

150mm x 210mm
6" x 8 1/4" (approx.)
AC126

210mm x 210mm
8 1/4" x 8 1/4" (approx.)
AC127

210mm x 210mm
8 1/4" x 8 1/4" (approx.)
AC128

210mm x 210mm
8 1/4" x 8 1/4" (approx.)
AC129

Stairway & Elevator Signs

120mm x 210mm
4 3/4" x 8 1/4" (approx.)
AC135

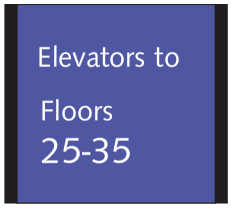
210mm x 210mm
8 1/4" x 8 1/4" (approx.)
AC136

210mm x 210mm
8 1/4" x 8 1/4" (approx.)
AC137

120mm x 210mm
4 3/4" x 8 1/4" (approx.)
AC138

150mm x 300mm
6" x 10" (approx.)
AC139

210mm x 210mm
8 1/4" x 8 1/4" (approx.)
AC140



210mm x 210mm
8 1/4" x 8 1/4" (approx.)
AC141

150mm x 255mm
6" x 10" (approx.)
AC142

300mm x 300mm
11 13/16" x 11 13/16" (approx.)
AC143

Restroom Signs

210mm x 210mm
8 1/4" x 8 1/4" (approx.)
AC150

210mm x 210mm
8 1/4" x 8 1/4" (approx.)
AC151

225mm x 210mm
8 7/8" x 8 1/4" (approx.)
AC152

255mm x 210mm
10" x 8 1/4" (approx.)
AC153

Room, Section, Suite & Column Signs

150mm x 210mm
6" x 8 1/4" (approx.)
AC160

150mm x 255mm
6" x 10" (approx.)
AC161

150mm x 150mm
6" x 6" (approx.)
AC162

150mm x 900mm
6" x 24" (approx.)
AC163

150mm x 210mm
6" x 8 1/4" (approx.)
AC164

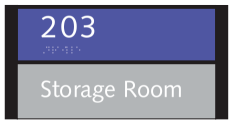
150mm x 255mm
6" x 10" (approx.)
AC165

90mm x 150mm
3 1/2" x 6" (approx.)
AC166

210mm x 915mm
8 1/4" x 36" (approx.)
AC167

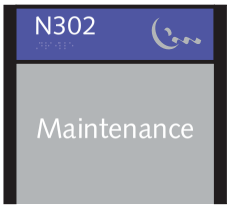
150mm x 210mm
6" x 8 1/4" (approx.)
AC168

150mm x 255mm
6" x 10" (approx.)
AC169



120mm x 210mm
4 3/4" x 8 1/4" (approx.)
AC170

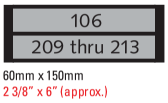
210mm x 210mm
8 1/4" x 8 1/4" (approx.)
AC171



210mm x 210mm
8 1/4" x 8 1/4" (approx.)
AC172

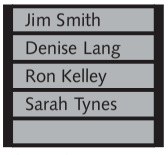
210mm x 210mm
8 1/4" x 8 1/4" (approx.)
AC173

255mm x 255mm
10" x 10" (approx.)
AC174

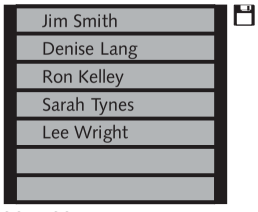


60mm x 150mm
2 3/8" x 6" (approx.)
AC175

90mm x 210mm
3 1/2" x 8 1/4" (approx.)
AC179



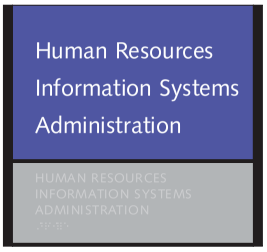
150mm x 150mm
6" x 6" (approx.)
AC176



210mm x 210mm
8 1/4" x 8 1/4" (approx.)
AC180

255mm x 255mm
10" x 10" (approx.)
AC177

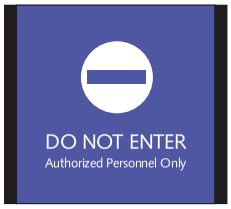
150mm x 255mm
6" x 10" (approx.)
AC178



255mm x 255mm
10" x 10" (approx.)
AC181

Regulatory and Information Signs

150mm x 150mm
6" x 6" (approx.)
AC185



210mm x 210mm
8 1/4" x 8 1/4" (approx.)
AC186

255mm x 255mm
10" x 10" (approx.)
AC187

300mm x 300mm
11 13/16" x 11 13/16" (approx.)
AC188

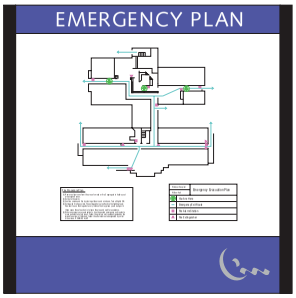
120mm x 210mm
4 3/4" x 8 1/4" (approx.)
AC189

150mm x 255mm
6" x 10" (approx.)
AC190

150mm x 255mm
6" x 10" (approx.)
AC191

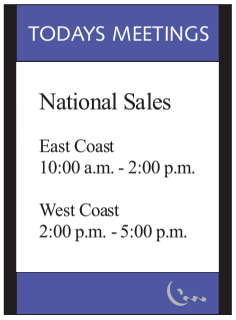
150mm x 300mm
6" x 11 13/16" (approx.)
AC192

Emergency Plans & Poster Holders



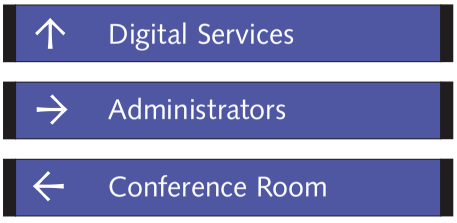
280mm x 215mm (Insert Size)
11" x 8.5"
AC195

280mm x 215mm (Insert Size)
11" x 8.5"
AC196



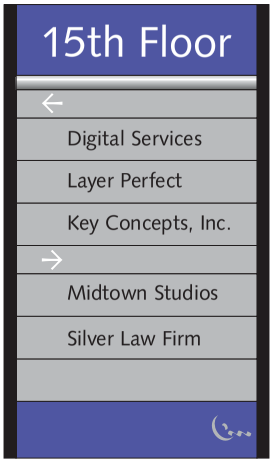
215mm x 280mm (Insert Size)
8.5" x 11"
AC197

Directories and Directional Signs

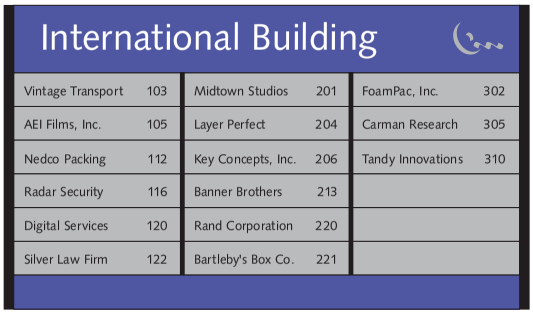


(optional)
AC200

AC201



(optional)
AC202



(optional)
AC203

NOTE: The directory & directional sign illustrations above represent only a few of the virtually limitless possibilities and options. For more detailed information and product options, consult your local APCO representative.

APCO

APCO USA
388 Grant St., SE
Atlanta, GA USA 30312-2227
Tel: 404-688-9000
Fax 404-577-3847
Email: sales@apcosigns.com

Features user updatable paper inserts compatible with APCO's SignWord Pro desktop sign making software.

For additional information on Accord[15] and other APCO systems, visit our website at **www.apcosigns.com**

BASE BUILDING/TRACON SIGNAGE				
	ROOM NAME	SIGNAGE TYPE	KEYED NOTE	MOUNTING SIDE
Signage based APCO system "Accord 15" (Cut Sheets with sizes and typical verbage attached)				
**	4' X 6' EXTERIOR ENTRY SIGNAGE NEAR MAIN ENTRY	SIGNCURVE© BY APCO	10	NORTH EXTERIOR
	VESTIBULE	-	-	-
102	LOBBY/SECURITY AREA	AC203	11	SOUTH WALL
		AC141	11	SOUTH WALL
103	STAIR 1	AC135	4	102
		AC142	4	103
104	WOMEN'S TOILET	AC150 (HC SYMB.)	2	111
105	MEN'S TOILET	AC150 (HC SYMB.)	2	111
106	ENVIRONMENTAL SHOP	AC170	2	111
		EXT.	1	111
107	SECURITY EQUIPMENT ROOM	AC170	2	111
108	JANITOR CLOSET	AC170	2	111
109	DDC/POER/RMM CONTR ROOM	AC170	3	111
111	HALLWAY	-	-	-
112	SECURED RECEIVING AREA	AC170	1	111
		EXT.	-	EXT @ door 112A
113	ON-SITE ATSS	AC170	3	115
114	UNUSED	AC170	2	112
115	HALLWAY	-	-	-
116	ON-SITE ATSS	AC170	3	115
117	ON-SITE ATSS	AC170	3	115
118	FIRE RISER ROOM	AC170 EXTERIOR GRADE	1	EXT @ door 118
119	MECHANICAL EQUIPMENT AREA	AC170	6	111
120	-	-	-	-
121	VESTIBULE	AC170 EXTERIOR GRADE	1	EXT @ door 121A
122	ELECTRICAL SWITCHGEAR ROOM	AC170	2	121
		AC170	2	123
123	VESTIBULE	AC170 EXTERIOR GRADE	1	EXT @ door 123A
124	UPS B	AC170	2	122
		AC170 EXTERIOR GRADE	1	EXT @ door 124A

125	BATTERY ROOM B	AC170	2	122
		AC170 EXTERIOR GRADE	2	EXT @ door 125A
126	E/G ROOM	AC170	6	122
		AC170 EXTERIOR GRADE	1	EXT @ door 126A
		AC170 EXTERIOR GRADE	2	EXT @ door 126B
		AC170 EXTERIOR GRADE	2	EXT @ door 126D
127	BATTERY ROOM A	AC170	2	122
		AC170 EXTERIOR GRADE	2	EXT @ door 127A
128	UPS A	AC170	2	122
		AC170 EXTERIOR GRADE	1	EXT @ door 128A

201	LOBBY	AC138		
		AC141		
		AC202		
202	BRIDGE	-	-	-
203	STAIR 1	AC140	4	201
		AC142	4	203
204	WOMEN'S TOILET	AC150 (HC SYMB.)	2	211
205	MEN'S TOILET	AC150 (HC SYMB.)	2	211
206	BREAKROOM	AC170	3	211
207	TECHNICAL LIBRARY	AC170	7	211
208	ON-SITE ATSS	AC114	7	211
209	TELCO	AC170	1	211
211	HALLWAY	-	-	-
212	IT SUPPORT	AC114	3	211
213	LAN ROOM	AC170	2	212
214	STORAGE	AC170	6	211
215	ELECTRONICS EQUIPMENT	AC170 @ 215C	1	211
		AC170 @ 215D	1	211
		AC170 @ 215A	1	214
		AC170 @ 215B	1	216
216	TECHNICAL WORK SPACE	AC170	3	221

217	SS SYSTEMS SPECIALIST	AC114	3	221
218	SS SYSTEMS SPECIALIST	AC114	3	221
219	LOCKER ROOM	AC170	2	221
220	-	-	-	-
221	HALLWAY	-	-	-
222	UNUSED	AC170	8	221
223	-	-	-	-
224	-	-	-	-
225	TECH OPS CBI/CLASSROOM	AC128	9	231
226	TECH OPS SSC MANAGER	AC114	4	231
227	ADMIN COORD	AC114	3	231
228	COORD	AC114	3	231
229	COORD	AC114	3	231
230	-	-	-	-
231	HALLWAY	-	-	-
232	ADMIN COORD	AC114	3	231
233	TECH OPS SSC MANAGER	AC114	3	231
234	LOGISTICS MAN SPEC	AC170	3	231
235	LOGISTICS MAN SPEC	AC170	3	231
236	MAIL ROOM/FILES/COPY AREA	AC170	2	231

301	LOBBY	AC138		
		AC141		
		AC202		
302	DRUG TEST ROOM	AC170	2	301
303	STAIR 1	AC140	4	301
		AC142	4	303
304	WOMEN'S TOILET	AC150 (HC SYMB.)	2	311
305	MEN'S TOILET	AC150 (HC SYMB.)	2	311
306	SHOWER	AC170	9	304
307	SHOWER	AC170	9	306
308	TRACON OPER SUPERVISOR	AC170	2	311
		AC180	2	311
309	TRACON OPER MANAGER	AC114	3	311
310	-	-	-	-
311	HALLWAY	-	-	-
312	TRACON OPER MANAGER	AC114	3	311
313	TRACON OPER MANAGER	AC114	3	311

314	TRAFFIC MANAGER SUPERVISOR	AC114	3	316
315	TRAFFIC SUPERVISOR MANAGER	AC114	3	316
316	HALLWAY	-	-	-
317	TRAFFIC MANAGER COORD	AC114	7	317
318	UNUSED	AC170	2	316
319	LOCKER ROOM	AC170	2	316
320	-	-	-	-
321	BREAKROOM	AC170	6	316
322	MAINT/EQUIPMENT ACCESS	AC170	2	311
323	VESTIBULE	AC186	5	311
		AC170	5	311
324	MAINT/EQUIPMENT WORKROOM	AC170	6	321
325	MAINT/EQUIPMENT ACCESS	AC170	2	323 @ door 325A
		AC170	2	326 @ door 325B
326	VESTIBULE	AC186	5	326
		AC170	5	326
327	TRACON	AC170	2	326 @ door 327B
		AC170	2	323 @ door 327A
328	HALLWAY	-	-	-
329	ELECTRICAL DISTRIBUTION	AC170	2	328
330	-	-	-	-
331	LAN ROOM	AC170	2	328
332	TRACON QUAL ASSIST SPEC TAPE PALYBACK/MON	AC128	2	328
333	AIRSPACE PROCED SPEC	AC114	3	339
334	PLOTTER/PRINTER CHARTS	AC170	2	338
335	TRAINING SPEC	AC128	2	338
336	UNUSED	AC128	2	339
337	DEBRIEF	AC128	2	339
338	TRACON SUPPORT MANAGER	AC114	3	339
339	HALLWAY	-	-	-
340	-	-	-	-
341	UNUSED	AC114	3	339
342	TRACON SUPPORT MANAGER	AC114	3	339
343	AUTOM SPEC	AC114	3	339
344	WEATHER SPEC	AC114	3	339
345	UNUSED	AC114	3	301

401	LOBBY	AC138		
		AC141		
		AC202		
402		-	-	-
403	STAIR 1	AC140	4	401
		AC142	4	403
404	WOMEN'S TOILET	AC150 (HC SYMB.)	2	411
405	MEN'S TOILET	AC150 (HC SYMB.)	2	411
406	STORAGE ROOM	AC170	2	411
407	ATCT OPERAT SUPERVISOR	AC114	3	411
408	ATCT OPERAT SUPERVISOR	AC114	3	411
409	ATCT OPERAT SUPERVISOR	AC114	3	411
410		-	-	-
411	HALLWAY	-	-	-
412	ATCT OPERAT SUPERVISOR	AC114	3	411
413	ATCT OPERAT SUPERVISOR	AC114	3	411
414	AIRSPACE PROCED SPEC	AC114	3	415
415	HALLWAY	-	-	-
416	TRAINING SPEC	AC128	2	415
417	MAILROOM/FILES/COPY AREA	AC170	2	411
418	BREAKROOM	AC170	3	411
419	SMALL CONFERENCE AREA	AC128	3	411
420		-	-	-
421	LARGE CONFERENCE AREA	AC128	3	411
		AC128	3	411
422	CBI TRAINING ROOM	AC128	2	431
423	ATCT ASSIST SPEC	AC114	3	431
424	UNUSED	AC114	3	431
425	ATCT OPERAT MANAGER	AC114	3	431
426	ATCT SUPPORT MANAGER	AC114	3	431
427	TERMINAL MANAGER	AC114	3	431
428	UNUSED	AC114	3	431
429	SECRETARY	AC114	3	431
430	-	-	-	-
431	HALLWAY	-	-	-
432	UNUSED	AC114	3	431
433	TSS INST/PROGRAMMER STATION	AC170	3	441
434	CBI CLASSROOM	AC128	2	441

435	TOWER SIMULATION SYSTEM (TSS) AREA	AC128	2	441
436	ETG LAB	AC128	2	441
		AC170	2	441
437	ETG & TSS TRAINING ROOM	AC128	3	441
		AC128	3	441
438	TSS PREBRIEF/DEBRIEF	AC128	3	441
439	TSS CLASSROOM	AC128	3	441
440	-	-	-	-
441	HALLWAY	-	-	-
442	CBI TRAINING ROOM	AC128	3	441
443	TRAFFIC MANAGER OFFICE	AC114	3	441
444	UNUSED	AC114	3	411
445	AIR TRAFFIC DISTRICT MANAGER	AC114	3	451
446	ADMIN OFFICE	AC114	3	431
447	ELECTRICAL DISTRIBUTION	AC170	2	451
448	STAFF MANAGER	AC114	3	451
449	LAN ROOM	AC170	2	451
450	ADMIN ASSISTANT	AC114	3	451
451	HALLWAY	-	-	-
452	TEACH OPS DISTRICT MANAGER	AC114	3	451
453	ADMIN COORDINATION	AC114	3	401
454	ADMIN OFFICER	AC114	3	401
455	UNUSED	AC114	3	401
501	VESTIBULE	-	-	-
502	ELEVATOR CONTROL	AC170		-
503	STAIR 1	AC140	2	501
		AC142	2	503

	GENERAL NOTES:
A	ALL SIGNAGE SHALL BE MOUNTED WITH LOWEST LINE OF TEXT AT 48" A.F.F. UNLESS NOTED OTHERWISE.
B	TYPICAL CLEAR FLOOR SPACE OF 18" CENTERED ON THE SIGN SHALL BE PROVIDED OUTSIDE OF THE DOOR SWING.
	HEIGHT/LOCATION KEYED NOTES:

1	WALL MOUNT ON RIGHT SIDE OF DOUBLE DOORS
2	WALL MOUNT ADJACENT TO LATCH EDGE OF DOOR
3	WALL MOUNT ADJACENT TO SIDELIGHT
4	MOUNT ON CENTER OF SIDELIGHT GLASS
5	MOUNT ON CENTER OF INACTIVE LEAF OF DOUBLE DOOR
6	WALL MOUNT OUTSIDE OF DOOR SWING ON RIGHT SIDE OF CORRIDOR
7	MOUNT ON SYSTEMS FURNITURE
8	MOUNT ON RIGHT SIDE OF ENTRY SPACE
9	WALL MOUNT ON HINGE SIDE OF DOOR.
10	SURFACE MOUNT TO EXTERIOR CONCRETE WALLS AS INDICATED BY THE OWNER
11	MOUNT CENTERED ON WALL INDICATED.

ATCT BUILDING SIGNAGE

	ROOM NAME	SIGNAGE TYPE	KEYED NOTES	MOUNTING SIDE
Signage based APCO system "Accord 15" (Cut Sheets with sizes and typical verbage attached)				
**	4'X'6' EXTERIOR ENTRANCE SIGN NEAR MAIN ENTRY	SIGNCURVE© BY APCO	10	NORTH WALL
0101	ELEVATOR LOBBY	AC203	-	SOUTH WALL
		AC141	-	EAST WALL
		AC138	-	EAST WALL
0102	VESTIBULE	-	-	-
0103	STAIR 2	AC135	2	0101 @ DOOR 0103B
		AC142	10	WEST WALL
		AC200 (EXIT)	10	WEST WALL
0104	STAIR 3	AC142	10	WEST WALL
		AC200 (EXIT)	10	WEST WALL
0105	SMOKING ROOM	AC170 EXTERIOR GRADE	3	NORTH EXTERIOR
0106	LANDSCAPE EQUIPMENT ROOM	AC170 EXTERIOR GRADE	3	SOUTH EXTERIOR
0107	UNUSED	AC170	9	0101
0201	ELEVATOR LOBBY	AC202	9	0201 @ DOOR 0201
		AC141	10	EAST WALL
		AC138	10	EAST WALL
0202	VESTIBULE	AC170 (x2)	5	0202
0203	STAIR 2	AC140	2	0201
		AC142	2	0203
0204	STAIR 3	AC140	2	0201
		AC142	2	0204
0205	PUMP	AC170	2	0202
0301	ELEVATOR LOBBY	AC202	9	0301 @ DOOR 0301
		AC141	10	EAST WALL
		AC138	10	EAST WALL
0302	VESTIBULE	AC170	5	0302
0303	STAIR 2	AC140	2	0301
		AC142	2	0303
0304	STAIR 3	AC140	2	0301
		AC142	2	0304
0401	ELEVATOR LOBBY	AC202	9	0401 @ DOOR 0401
		AC141	10	EAST WALL
		AC138	10	EAST WALL
0402	VESTIBULE	AC170	5	0402
0403	STAIR 2	AC140	2	0401
		AC142	2	0403
0404	STAIR 3	AC140	2	0401

		AC142	2	0404
0501	ELEVATOR LOBBY	AC202	9	0501 @ DOOR 0501
		AC141	10	EAST WALL
		AC138	10	EAST WALL
0502	VESTIBULE	AC170	5	0502
0503	STAIR 2	AC140	2	0501
		AC142	2	0503
0504	STAIR 3	AC140	2	0501
		AC142	2	0504
0601	ELEVATOR LOBBY	AC202	9	0601 @ DOOR 0201
		AC141	10	EAST WALL
		AC138	10	EAST WALL
0602	VESTIBULE	AC170	5	0602
0603	STAIR 2	AC140	2	0601
		AC142	2	0603
0604	STAIR 3	AC140	2	0601
		AC142	2	0604
0701	ELEVATOR LOBBY	AC202	9	0701 @ DOOR 0701
		AC141	10	EAST WALL
		AC138	10	EAST WALL
0702	VESTIBULE	AC170	5	0702
0703	STAIR 2	AC140	2	0701
		AC142	2	0703
0704	STAIR 3	AC140	2	0701
		AC142	2	0704
0801	ELEVATOR LOBBY	AC202	9	0801 @ DOOR 0801
		AC141	10	EAST WALL
		AC138	10	EAST WALL
0802	VESTIBULE	AC170	5	0802
0803	STAIR 2	AC140	2	0801
		AC142	2	0803
0804	STAIR 3	AC140	2	0801
		AC142	2	0804
0901	ELEVATOR LOBBY	AC202	9	0901 @ DOOR 0901
		AC141	10	EAST WALL
		AC138	10	EAST WALL
0902	VESTIBULE	AC170	5	0902
0903	STAIR 2	AC140	2	0901
		AC142	2	0903
0904	STAIR 3	AC140	2	0901
		AC142	2	0904

1001	ELEVATOR LOBBY	AC202	9	1001 @ DOOR 1001
		AC141	10	EAST WALL
		AC138	10	EAST WALL
1002	VESTIBULE	AC170	5	1002
1003	STAIR 2	AC140	2	1001
		AC142	2	1003
1004	STAIR 3	AC140	2	1001
		AC142	2	1004
1101	ELEVATOR LOBBY	AC202	9	1101 @ DOOR 1101
		AC141	10	EAST WALL
		AC138	10	EAST WALL
1102	VESTIBULE	AC170	5	1102
1103	STAIR 2	AC140	2	1101
		AC142	2	1103
1104	STAIR 3	AC140	2	1101
		AC142	2	1104
1201	ELEVATOR LOBBY	AC202	9	1201 @ DOOR1201
		AC141	10	EAST WALL
		AC138	10	EAST WALL
1202	VESTIBULE	AC170	5	1202
1203	STAIR 2	AC140	2	1201
		AC142	2	1203
1204	STAIR 3	AC140	2	1201
		AC142	2	1204
1301	ELEVATOR LOBBY	AC202	9	1301 @ DOOR 1301
		AC141	10	EAST WALL
		AC138	10	EAST WALL
1302	VESTIBULE	AC170	5	1302
1303	STAIR 2	AC140	2	1301
		AC142	2	1303
1304	STAIR 3	AC140	2	1301
		AC142	2	1304
1305	CONTROL ROOM	AC170	2	1302
1401	ELEVATOR LOBBY	AC202	9	1401 @ DOOR 1401
		AC141	10	EAST WALL
		AC138	10	EAST WALL
1402	VESTIBULE	AC170	5	1402
1403	STAIR 2	AC140	2	1401
		AC142	2	1403
1404	STAIR 3	AC140	2	1401
		AC142	2	1404
1501	ELEVATOR LOBBY	AC202	9	1501 @ DOOR 1501

		AC141	10	EAST WALL
		AC138	10	EAST WALL
1502	VESTIBULE	AC170	5	1502
1503	STAIR 2	AC140	2	1501
		AC142	2	1503
1504	STAIR 3	AC140	2	1501
		AC142	2	1504
1601	ELEVATOR LOBBY	AC202	9	1601 @ DOOR 1601
		AC141	10	EAST WALL
		AC138	10	EAST WALL
1602	VESTIBULE	AC170	5	1602
1603	STAIR 2	AC140	2	1601
		AC142	2	1603
1604	STAIR 3	AC140	2	1601
		AC142	2	1604
1605	ANTENNA EQUIPMENT	AC170	5	1602
1701	ELEVATOR LOBBY	AC202	9	1701 @ DOOR 1701
		AC141	10	EAST WALL
		AC138	10	EAST WALL
1702	VESTIBULE	AC170	5	1702
1703	STAIR 2	AC140	2	1701
		AC142	2	1703
1704	STAIR 3	AC140	2	1701
		AC142	2	1704
1705	MECHANICAL EQUIPMENT	AC170	8	1702
1801	ELEVATOR LOBBY	AC202	9	1801 @ DOOR 1801
		AC141	10	EAST WALL
		AC138	10	EAST WALL
1802	VESTIBULE	AC170	5	1802
1803	STAIR 2	AC140	2	1801
		AC142	2	1803
1804	STAIR 3	AC140	2	1801
		AC142	2	1804
1805	ELECTRONICS EQUIPMENT	AC170 (x2)	8	1802
1901	ELEVATOR LOBBY	AC202	9	1901 @ DOOR 1901
		AC141	10	EAST WALL
		AC138	10	EAST WALL
1902	VESTIBULE	AC170	5	1902
1903	STAIR 2	AC140	2	1901
		AC142	2	1903
1904	STAIR 3	AC140	2	1901
		AC142	2	1904
1905	HALLWAY	-	-	

1906	MEN'S TOILET	AC150 (HC SYMB)	2	1905
1907	AT OFFICE	AC114	3	1905
1908	DEBRIEF	AC128	3	1905
1909	QUIET BREAKROOM	AC170	6	1905
1910	-	-	-	-
1911	BREAKROOM	AC170	2	1905
1912	STORAGE	AC170	2	1909
		AC170	2	1911
1913	JANITOR	AC170	2	1915
1914	WOMEN'S TOILET	AC150 (HC SYMB)	2	1915
1915	HALLWAY	-	-	-
2001	ELEVATOR LOBBY	AC202	9	2001 @ DOOR 2001
		AC141	10	EAST WALL
		AC138	10	EAST WALL
2002	VESTIBULE	AC170	5	2002
2003	STAIR 2	AC140	2	2001
		AC142	2	2003
2004	STAIR 3	AC140	2	2001
		AC142	2	2004
2005	STAIR 4	-	-	-
2006	STAIR 5	-	-	-
2007	MECHANICAL	AC170	5	2002 @ DOOR 2002
2101	STAIR LOBBY	-	-	-
2102	VESTIBULE	AC170	2	2101
2103	ELECTRONICS EQUIPMENT	AC170	2	2102
2104	-	-	-	-
2105	STAIR 4	AC140	2	2101
		AC142	2	2105
2106	STAIR 5	AC140	2	2101
		AC142	2	2106
2107	STAIR 6	AC140	8	WEST WALL AT BASE
		AC142	8	EAST WALL AT BASE
2201	CONTROL CAB	-		
101	PARKING STRUCTURE - LEVEL 1	-		
102	STAIR 7	AC140		
		AC142		
201	PARKING STRUCTURE - LEVEL 2	-		
202	STAIR 7	AC140		
		AC142		
G101	GUARD STATION	-		
G102	TOILET	AC151 (HC)		

	GENERAL NOTES:
A	ALL SIGNAGE SHALL BE MOUNTED WITH LOWEST LINE OF TEXT AT 48" A.F.F. UNLESS NOTED OTHERWISE.
B	TYPICAL CLEAR FLOOR SPACE OF 18" CENTERED ON THE SIGN SHALL BE PROVIDED OUTSIDE
	HEIGHT/LOCATION KEYED NOTES:
1	WALL MOUNT ON RIGHT SIDE OF DOUBLE DOORS
2	WALL MOUNT ADJACENT TO LATCH EDGE OF DOOR
3	WALL MOUNT ADJACENT TO SIDELIGHT
4	MOUNT ON CENTER OF SIDELIGHT GLASS
5	MOUNT ON CENTER OF INACTIVE LEAF OF DOUBLE DOOR
6	WALL MOUNT OUTSIDE OF DOOR SWING ON RIGHT SIDE OF CORRIDOR
7	MOUNT ON SYSTEMS FURNITURE
8	MOUNT ON RIGHT SIDE OF ENTRY SPACE
9	WALL MOUNT ON HINGE SIDE OF DOOR.
10	MOUNT CENTERED ON WALL INDICATED.

SECTION 12 24 12 – GUARD SHACK TRANSPARENT PLASTIC WINDOW SHADES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes requirements for material, fabrication and installation of transparent plastic window shades for use in the Guard Shack. Shades shall be installed on all exposures of the guard shack. The use of single shades is specified on the drawings.

1.2 SUBMITTALS

A. Product Data: For plastic window shades; include a materials list.

B. Shop Drawings: Include plans, elevations, sections, details, details of installation, operational clearances, and relationship to adjoining Work.

1. Verify dimensions by field measurements before fabrication and indicate measurements on Shop Drawings.

C. Maintenance data.

D. Qualification Data: For manufacturer.

1.3 PERFORMANCE REQUIREMENTS

A. Shade material shall be manufactured from a polyester type polymer in accordance with Federal Specification L-F-377b for type weatherable DuPont Mylar clear sheet film or other manufacturer approved by the COTR. Fire resistant rated “self-extinguishing to very slow burning” U.S. Testing Company, fire test 302; melting point 500 deg. F, combustion 977 deg. F. no toxic hazard.

B. Transparent Plastic Shade Film Construction: Shade product shall consist of a 5 mil, 3-ply laminated polyester film. Two sheets of polyester vat dyed gray, hard coat S/R applied to one side. The final film construction shall be 5 gage thick, optically clear and totally transparent. Surface tinting or color adhesives will not be acceptable.

C. Visible Light Transmission: Shade shall transmit no more than 4 percent of the visible solar energy (from 380 to 780 nanometers) when measured by Association of Industrial Metalizers, Coaters, and Laminators (AIMCAL) Standard Methods.

D. Ultra-Violet Transmission: Shade shall transmit no more than 2 percent of the ultra-violet solar energy (from 300 to 380 nanometers) when measured by AIMCAL Standard Methods.

E. Total Solar Energy Rejected: Shade will reject 60.5 percent of the total solar energy transmitted (from 360 to 2100 nanometers) when measured by AIMCAL Standard Methods.

1. Solar Absorptions: 61 percent.
2. Shading Coefficient: 0.45.
3. Solar Heat Gain Coefficient: 0.40.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Manufacturer who can comply with applicable standard methods of the Association of Industrial Metalizers, Coaters, and Laminators (AIMCAL) for manufacture and fabrication of transparent plastic window shades. Manufacturer shall be recognized producer of transparent plastic window shades for the previous 10 years.

B. Fire-Test-Response Characteristics: Provide products passing flame-resistance testing according to NFPA 701 by a testing agency acceptable to authorities having jurisdiction.

C. Installer Qualifications: Installer must have completed shade installations of similar materials, design, and extent indicated in the plans and this specification. Installer must possess a record of successful in-service performance for 2 years or more.

1.5 WARRANTY

A. Furnish to FAA three copies of the product warranty that certifies that all the specification requirements have been met.

PART 2 - PRODUCTS

2.1 ROLLER SHADES

A. Available Manufacturers: Provide products designed for this project by the following manufacturers:

1. Madico, Inc.
2. Plastic-View ATC.
3. Solar-Screen.
4. Other manufacturer acceptable to the COTR.

2.2 ROLLER SHADE SYSTEM FABRICATION

A. Bottom Bar: Shades shall have a flat 1-inch by 1/2 inch, dull black, full width metal hemline bar, minimum of 26 gage, at bottom onto which the pull cord and shade are attached. Black plastic caps shall be provided on each end of hemline bar to cover any sharp exposed edges.

B. Shade Cords: Shade cords shall be black and of sufficient length to route around equipment to cord lock positions whenever required. The cords shall be 9/64 inch diameter rope made of 4.5 Duro Nylon and shall be attached underneath the center of the bottom of the hemline bar.

C. Shade Rollers: Shades shall be mounted on a 1-3/4 inch diameter corrosion resistant metal wrapped roller. The rollers shall be spring loaded, single piece barrel, with a reusable safety cotter key type retainer installed through both end pins and washers to prevent roller from falling out of mounting brackets. Constant tensions in shades is required.

D. Mounting Brackets: Provide mounting brackets with a 2-1/4 inch resting ledge. Standard ceiling brackets are not acceptable. A label stating "This End Down" with an arrow pointing in the proper installation direction of the roller into the mounting brackets shall be placed on the spring end of each shade roller. The shade film laminate material shall be mounted on rollers to minimize ridgings. Roll-off direction of material from roller shall be as directed by the shade manufacturer for use in the tower guard shack.

E. Each shade shall have a label or whatever suitable means required to specify and identify the proper roll-off direction.

F. Each shade shall have a manufacturer's label attached to the metal bar hemline giving cleaning instructions and the telephone number for emergency service.

G. Lock Pulley. Lock pulleys shall consist of a roller and a spring return side action cam cord grip.

H. Cord Direction Change Pulley: Provide cord direction change pulley which shall be used to route shade cord around obstructions where they exist. Pulleys shall be positioned in direct line with cord outlet on metal hemline.

I. Shade Size: Shade roller width shall be within 1/2-inch of maximum possible width as determined by physical limitations. Shade material with shade fully drawn shall be to within 1 inch of columns on bias cut sides and to within 1-3/4 inch of columns on vertical cut sides. Horizontal seam shall be located a minimum of 55 inches from the bottom of the shade. Shades in guard shacks shall be bias cut when required. To ensure a safe roll-up, a minimum of 15 inches of shade material shall remain on the roller when the shade is fully extended.

J. Measuring for Shades: Measuring for shades and positioning shall be strictly in accordance with the shade manufacturer's instructions. Marks showing the precise position of all brackets, pulleys, and metal hemline positions as related to the factory measuring instructions shall be provided. All measurements shall be taken per instructions from shade manufacturer.

PART 3 - EXECUTION

3.1 ROLLER SHADE INSTALLATION

A. Install roller shades level, plumb, and aligned with adjacent units according to manufacturer's written instructions. Allow clearances for window operation hardware.

B. Shades shall be installed in shade recess pockets or on wood or metal plates. Shades shall follow the slope of guard shack glass as closely as practical within physical limitations of air ducts and other equipment. No drilling shall be done in vertical uprights of guard shack because some uprights may contain electrical cables.

C. Spring tension in roller shall be manually adjusted so that shades roll comfortably and do not bind.

D. In order to safely control and limit the shade travel, the installer shall make two knots in the shade cord. One knot shall be placed before the lock pulley to prevent the metal hemline bar from hitting the windowsill. The second knot shall be placed after the lock pulley to prevent the metal hemline bar from hitting and overrunning the shade roller. Adherence to THIS END UP label when installing shade will prevent improper roller installation which can result in a locked shade situation when the metal bar hemline is near the lock pulley and cannot be pulled down to release the spring cam lock.

E. Adjust and balance roller shades to operate smoothly, easily, safely, and free from binding or malfunction throughout the entire operational range.

F. Clean roller shade surfaces after installation, according to manufacturer's written instructions.

END OF SECTION 12 24 12